Some Communications, confirming the present Appearance of the Ring about Saturn, *by M.* Hugens de Zulechem *and Mr.* Hook.

THe *former* writeth in a Letter of his, dated at the *Hague* Octob. 31. 1670. ſt. n. That he obſerv'd *Saturn* with his Teleſcope of 22 feet, a little before he came out of *France*, which was the laſt Summer of this 1670. and ſaw his Figure to be very conform to what it ſhould be according to his *Hypotheſis*; *viz.* the *Anſæ* or Arms to be very narrow, inſomuch that their opening appear'd not but very obſcurely.

The *Latter* hath obſerved the ſame in *London*, Septemb. 16. ſt. v. as is repreſented in *Tab.* 1. *Fig.* 3.

An Extract out of a lately Printed Epiſtolary Addreſs, made to the G. Duke of Toſcany *touching ſome Anatomical Engagements, of* Laur. Bellini, *Ord. Anat. Prof. at Piſa.*

I Promiſe (ſaith that learned Anatomiſt) to give the whole Doctrine of *Reſpiration*, and to comprehend it in that order, that if I am not deceived in my own affair, the matter of the principal part of the Breaſt, and the whole Fabrick of the *Lungs* ſhall be made certain and evident, foraſmuch as all things do ſo aptly anſwer to one another, and are grounded upon Geometrical Principles. The ſum of it is this in the Authors own words.

Fuit in Aſperam Arteriam aer, momento compoſito ex gravitati & vi laterali, eaque Aeri, extrinſecus ſuperficiem pectoris circumprimenti, æquiponderat. Hinc muſculis Inſpiratoriis ſeſe contrahendi poteſtas permittitur; unde Coſtarum elevatio ac dilatatio, & aucta Pectoris amplitudo: Tum penitior Aeris irruptio, & expanſio ductuum pulmonarium; quod totum in Inſpiratione *contingit.*

Mox proprio pondere concidentibus ſupra tumidum Pulmonem coſtis, ſpatium Pectoris fit Anguſtius, & ipſarum ac diaphragmatis vi Pulmo comprimitur; Aerque partim per os extru-

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ditur, partim ad minima uſque vaſcula adigitur, ſi quorum angustias penetrare proprio pondere non potuit; quouſque totus Pulmo detumeſcat, reſtitante ſolum in ejus veſiculis expanſa Aeris portione: quæ ſeries eſt Exſpirationis. *Hinc reſiſtentiæ minoris occurſu poteſt externus Aer rurſus irruere, eoque ordinè, Reſpirationis opus peragere.*

Hæc autem ut evincantur, oſtendam prius, Muſculos pectoris non modò diſpoſitos ad leges Mechanicas, adeóque pro majori ſuperanda reſiſtentia validiores, pro minori debiliores, verùm etiam, quadam interioris Geometriæ peritiâ, ut ſeſe in Inſpiratione contrahentes, figuram Pectoris multò capaciorem efforment. Coſtas in Expiratione ex ſeipſis concidere, figuræ, poſitionis, atque articulationis beneficio: Diaphragmatis ac Muſculi Triangularis fabricam (quantum ex aliorum ſciam figuris ac ſcriptis, nulli cognitam) nec non utriuſque uſum perſimilem; Ex quibus ea omnia evidenter conſtabunt.

Inſuper, Unum *eſſe* Uſum *Aeris in Pulmonibus, ut ſcil. à Capillaribus Vaſis Arteriæ pulmonariæ ad Capillaria Venæ Sanguinem adigat, ſeu ex uno ſinu cordis in alterum; atque in hoc tranſitu per pulmones ſanguinem ſolvi.*

Neque ita in Homine ſolum, verum hæc eadem etiam in Brutis *ita ſe habere moſtrabimus; & machinam in* Avium *coſtis perelegantem exponemus; quid porrò Vicarium Coſtis in* Teſtudinibus: *Idemque obtineri per* Aquam, *à* Piſcibus *ad bronchias expulſam, quod à cæteris per Aerem, pulmones explicantem.*

Hinc verò, quanta & quam facilis Propoſitionum ſeries, ad Pulmonum omnium figuras, ſuctus, vulnera, reſpirationes varias, mutatas, aut impeditas, in Aeris, Pulmonum aut Pectoris ſtatu diverſo: Quæ omnia quivis intelligat ex ſeipſo, dummodo id etiam ſuppoſuerit, Aerem æquo rariorem, & æquo denſiorem, Reſpirationi eſſe ineptum, & ſanguinis per pulmones excurſum prohibere.

Denique, ex iiſdem principiis deducam, probabiliter Fœtum in Utero non reſpirare; quod fortè etiam Geometricè demonſtrabo, ſi Diametros Arteriæ pulmonaris & Anaſtomoſis cum Arteria Magna comparare licuerit.

Addam his Opuſculum de Motu atque Uſu Bilis, *quorum alterum Geometricum eſt, alterum ex eo pendens, Obſervationibus illuſtrandum.*

illuſtrandum. Evincet illud, Fel *à Jecore & Veſicula ad inteſtina fluere; non è converſo: nec à Veſicula & Jecore in Cavam, ſpectatâ momentorum diverſitate, qua moventur fluida per contractiles & inæqualis amplitudinis tubulos. Unde conſtabit, Bilem è Veſicula elici non poſſe, niſi extrinſeca aliqua virtute comprimatur, quam ab adſtante & diſtento cibis Ventriculo petam; ſtatuens, Bilem in Veſicula ad digeſtionis tempus ſervari; ac tantum non evidenter oſtendens, per ipſam, tum temporis ad Duodenum fluentem, cibum à Ventriculo præparatum in Chylum faceſſere. Hinc ratio ſitûs Veſiculæ, Capſulæ communis in Jecore; cur item ductuum Felleorum aliquot in Veſicula deſinant; cur non-nulla Animalia eâdem deſtituta ſint. facile ex præcedentibus explicatur. Adhuc tamen obſervandus mihi ſitus Veſiculæ in quotquot occurrant Animalibus, præcipuè Carneo ventriculo præditis.* Pancreatis *etiam locum penſito, & humorem illius exprimi eodem, quo Bilis, tempore, deduco, ut ab utriſque permiſtis Chylus formetur.*

Erit hîc, Appendicis loco, Geometricum quiddam, demonſtrans, Quî fieri poſſit, ut in Veſica Urinaria generentur Conchylia ſpiralia, ſi per Ureteres exprimatur quid molle aut viſcidum, in Veſicæ reſiſtentiam incidens, eaque occaſione explicabitur, quo pacto in ſuperficie Terræ ſimilia intorta corpora poſſint produci, qualia in quibuſdam montibus obſervavi.

So far this Inquiſitive Anatomiſt, which the Publiſher (who very much doubteth, whether any Copies of this intimation, Printed at *Piſa* this very year, beſides that one, which lately came to his hands, be to be found in *England*) thought fit to inſert in theſe Papers, thereby to adminiſter occaſion to our dextrous Anatomiſts here, with all poſſible diligence and care to purſue, joyntly with that *Italian* Profeſſour, thoſe important Inquiries about ſuch conſiderable Subjects, as have been above related; comparing with their Reſearches in this matter the many notable Experiments, lately publiſhed in N°. 63. and 64. of theſe Tracts, made and communicated by the Honourable *Robert Boyle.*